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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/605,764

10/24/2003

Yoshifumi Kachi

39.023-AG

2763

29453

7590

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EXAMINER

SPEER, TIMOTHY M

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/605,764

Applicant(s)

KACHI ET AL.

Examiner

Timothy M. Speer

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1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/06, 12/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. On further consideration, the election of species mailed 08/23/06 has been withdrawn.

Accordingly, claims 1-16 will be treated on the merits.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-4 and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. These claims contain improper Markush language, rendering them indefinite. In each claim, the phrase "selected from" should be changed to --selected from the group consisting of--. From the present language, it is not clear whether or not the group is closed. See MPEP 2173.05(h).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 5, 6, 9, 10, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 2002-134484, machine translation enclosed).

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7. Sato teaches a semiconductor substrate holding device (susceptor). The susceptor comprises a ceramic substrate having a wafer retaining face, a resistive heating element provided interiorly in the substrate and a recess formed in the wafer retaining face (see figures 3-5 and accompanying text). Sato fails to teach that the recess is contoured either so that the perimetric wall meets the bottom surface to form an angle of over 90° and 170° or less or so that the perimetric wall and bottom face join in a bottom-portion circumferential verge having a curvature of 0.1 mm or more.

8. Sato teaches, generally, that the device is configured such that the perimetric wall and the bottom surface form an angle and that the bottom portion may have a curvature (see figures 3-5). Moreover, Sato teaches that the curvature may be varied depending on the diameter of the substrate being processed; showing that the curvature is a result effective variable (page 6, paragraph [0024] last sentence). Similarly, the angle is result effective and may be determined based on the substrate being processed.

9. It has been held that “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” See MPEP 2144.05 citing *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, in the present case, since Sato teaches that the angle or curvature at which the perimetric wall and bottom surface meet is result effective, it is not considered inventive to discover optimum or workable ranges with respect to this parameter.

10. Regarding claims 2 and 10, Sato teaches that the substrate may be formed of aluminum nitride (see page 5, paragraph [0018]). Therefore, to form the substrate of such a material would have been obvious to one having ordinary skill in the art, since Sato suggests such constructions.

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11. With respect to claims 5, 6, 13, and 14, Sato teaches that a plasma discharge electrode may be formed superficially to the susceptor (page 5, paragraph [0021]). Therefore, to form such a construction would have been obvious to one having ordinary skill in the art, since Sato suggests such constructions.

12. In light of the above, instant claims 1, 2, 5, 6, 9, 10, 13, and 14 are considered to be prima facie obvious in view of Sato.

13. Claims 3, 4, 7, 8, 11, 12, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Soma (USPN 5,231,690).

14. Sato was discussed above and fails to teach that the resistive heating element is formed of the materials set forth in instant claims 3, 4, 11 and 12. Soma teaches that metals such as molybdenum, tungsten, platinum and the like are conventionally employed as resistive heating elements in ceramic susceptors (col. 5, lines 58-61, for instance). Therefore, it would have been obvious to one having ordinary skill in the art to employ one of these metals in the resistive heating element of Sato, since Soma teaches that these metals are conventionally used for such resistive heating elements.

15. Regarding claims 7, 8, 15, and 16, as noted above, Sato teaches that a plasma discharge electrode may be formed superficially to the susceptor (page 5, paragraph [0021]). Therefore, to form such a construction would have been obvious to one having ordinary skill in the art, since Sato suggests such constructions.

16. Therefore, it is the Examiner's position that claims 3, 4, 7, 8, 11, 12, 15, and 16 are prima facie obvious in view of Sato in view of Soma.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Speer whose telephone number is 571-272-8385. The examiner can normally be reached on M-Th, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Timothy M. Speer


JOHN J. ZIMMERMAN
PRIMARY EXAMINER